

Air Quality Permit

Issued to: R-Y Timber, Inc.
P.O. Box 990
Livingston, MT 59047

Permit #2588-04
Permit #2588-00 Final: 1/5/90
Permit #2588-01 Final: 4/3/92
Permit #2588-02 Final: 8/10/93
Permit #2588-03 Final: 7/6/96
Modification Request Received: 6/28/96
Department Decision to Modify Issued: 7/26/96
Permit Final: 8/11/96

An air quality permit with conditions is hereby granted to the above-named permittee, hereinafter referred to as "R-Y Timber," pursuant to Sections 75-2-204 and 211, MCA, as amended, and Administrative Rules of Montana (ARM), Subchapter 11, PERMIT, CONSTRUCTION AND OPERATION OF AIR CONTAMINANT SOURCES, ARM 16.8.1101 *et seq.*, as amended, for the following

SECTION I: Permitted Facilities

A. Plant Location:

R-Y Timber is located approximately 2 miles southwest of Livingston, Montana and about one-half mile from Interstate 90 along Highway 89 (NW $\frac{1}{4}$, NW $\frac{1}{4}$, Section 25, Township 2 South, Range 9 West, Park County).

B. Existing Permitted Equipment and Facilities:

R-Y Timber operates a lumber mill. The operation includes a natural gas boiler, standard dry kiln, sawmill, and associated equipment.

C. Current Permitting Action

The current permitting action involves removing the NSPS reporting and record keeping requirements of 40 CFR 60 Subpart Dc for the Cleaver Brooks natural gas boiler.

SECTION II: Limitations and Conditions

A. Emission Conditions and Limitations

1. R-Y Timber shall not cause or authorize the use of any street, road or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 16.8.1401).
2. R-Y Timber shall apply water and/or other dust suppression agents to the general work area, log decks, rough lumber storage area, haul roads and access roads as necessary to control fugitive emissions and maintain compliance with the reasonable precaution limitations in Section II.A.1 (ARM 16.8.1103).

3. R-Y Timber shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes [ARM 16.8.1404 (2)]. This includes the Cleaver Brooks natural gas boiler and cyclones on pneumatic transfer systems installed after November 23, 1968
4. R-Y Timber shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes [ARM 16.8.1404 (1)]. This includes cyclones on pneumatic transfer systems installed before November 23, 1968.

B. Testing Requirements

1. The department may require testing (ARM 16.8.704).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 16.8.709).

C. Operational Reporting Requirements

1. R-Y Timber shall supply the department with annual production information for all emission points, as required by the department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

The information shall be gathered on a calendar year basis and is to be submitted to the department by the date required in the emission inventory request. Information shall be in the units as required by the department. Information shall include the following and may be used to calculate permit fees, based on actual yearly emissions, and/or may be used to determine compliance with permit conditions (ARM 16.8.1903). The information shall include the following:

- a. Annual millcut in mmbf.
 - b. Amount of natural gas combusted in the Cleaver Brooks natural gas boiler (Mscf/yr).
 - c. Hours of operation and average airflow rate, in standard cubic feet per minute (scfm), for the two shavings cyclones (burner and truck loadout).
 - d. Current acreage of disturbed area and percent exposed.
 - e. Application schedule for water or chemical dust suppressant, including hours of operation of water truck on plant grounds, if any.
2. All records compiled in accordance with this permit must be maintained by R-Y Timber as a permanent business record for at least five years following the date of the measurement, must be available at the plant site for inspection by the department and must be submitted to the department upon request (ARM 16.8.1109).

Section III: General Conditions

- A. Inspection - The recipient shall allow the department's representatives access to the source at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if the recipient fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving the permittee of the responsibility for complying with any applicable federal or Montana statute, rule or standard, except as specifically provided in ARM 16.8.1101, *et seq.* (ARM 16.8.1117).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401 *et seq.*, MCA.
- E. Appeals - Any person or persons who are jointly or severally adversely affected by the department's decision may request, within fifteen (15) days after the department renders its decision, upon affidavit, setting forth the grounds therefor, a hearing before the Board of Environmental Review. A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The department's decision on the application is not final unless fifteen (15) days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the department's decision until the conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection - As required by ARM 16.8.1115 Inspection of Permit, a copy of the air quality permit shall be made available for inspection by department personnel at the location of the permitted source.
- G. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay by the permittee of an annual operation fee may be grounds for revocation of this permit, as required by that Section and rules adopted thereunder by the Board of Environmental Review.

Permit Application Analysis
R-Y Timber Corporation
Permit Application #2588-04

I. Introduction/Process Description

A. Source Location

The mill is located approximately 2 miles southwest of Livingston, MT; 42 miles north of Yellowstone National Park, the nearest PSD Class I area; and about 5 miles northwest of the PSD Class II Absaroka-Beartooth Wilderness. A more detailed site description is contained in the original permit application and subsequent submittal.

The facility consists of the following emission sources (permit #2588-04):

1. Shaving to burner cyclone;
2. Shaving to truck loadout cyclone;
3. Fugitive dust - log yard;
4. Fugitive dust - mill/planer;
5. Fuel usage - diesel;
6. Log debarker;
7. 17.14 MMBtu/hr Cleaver Brooks natural gas boiler;
8. Standard dry kiln;

B. Permit History

Brand S Corporation was issued permit #2588-00 on January 5, 1990 for a silo-type wood-waste burner to be located at the Livingston lumber mill. Permit #2588-00 also included all other sources of air emissions at the Livingston mill. The BACT analysis and determination for the silo wood-waste burner is contained in the analysis section of permit #2588-00.

Permit #2588-00 required Brand S to perform a source test on the silo burner to demonstrate compliance with the particulate emission limit contained in the permit and to corroborate the emission factors used in the permit analysis emission inventory. Brand S was not able to develop a testing strategy that was acceptable to the department, so Brand S requested and received extensions of the source testing deadline contained in permit #2588-00.

After the issuance of the silo burner permit #2588-00, Brand S obtained contracts to ship all of the hogfuel and sawdust waste produced at the mill. Therefore, the mill waste was no longer burned and consequently the mill discontinued the use of the silo burner.

On April 3, 1992, Brand S was issued permit #2588-01 which postponed the source testing deadline and suspended the ambient air monitoring requirements until the silo burner was used on a regular basis.

On August 10, 1993, permit #2588-02 was issued to Brand S to construct and operate a natural gas-fired boiler and drying kilns at the lumber mill in Livingston, Montana. The natural gas-fired boiler, Cleaver Brooks Model CB200-400-150, is a

400 horsepower firetube boiler with steam production capability of approximately 13,800 pounds of steam per hour (pph). The kiln is a Standard Brand of the Standard Dry Kiln Company. The kiln was originally built in the 1950's and has not been used for several years. The kiln has been at the site for years, but was not assembled.

The boiler is used to heat the drying kilns. Steam from the boiler passes through a heat exchanger system in the kilns to heat the kiln air. Loads of lumber are rolled into the kiln where heated air is blown past the lumber. An average temperature of 185° F is maintained for approximately five days for each load. Air escapes from the kilns through numerous roof vents. Particulate emissions from the kiln roof vents are negligible and have not been included in the emission inventory. Any roof vent emissions from the kilns are a fugitive source because they are not routed through a stack (See Section III, BACT Analysis, Dry Kiln, permit #2588-02).

In addition to the request for a permit alteration, the emission testing requirements have been removed from the permit. No viable test method was developed to test for particulate emissions from silo wood-waste burners, so it is not possible to demonstrate compliance with the particulate emission limitation of ARM 16.8.1407(4). Since permit #2588-02 was issued, the department has revised the Wood-Waste Burner Rule (ARM 16.8.1407) to remove the particulate emission limitation.

Permit modification **#2588-03** transferred the permit from Brand S Lumber Company to R-Y Timber. In addition, the notification requirements for the Cleaver Brooks boiler were met and consequently removed from the permit; the actual start-up date of the boiler was January 1995. Also, all requirements pertaining to the silo wood-waste burner were removed from the permit; the silo wood-waste burner was removed from the site in 1993. Finally, Attachment 1, Ambient Air Monitoring Plan, was removed from the permit to reflect the department's approval to discontinue dustfall monitoring at the site because the requirements are no longer applicable to the olivine silo burner.

C. Current Permit Modification

During the last permitting action the department determined that the NSPS requirements of 40 CFR 60 Subpart Dc may not have been applicable to the Cleaver Brooks natural gas boiler. R-Y Timber confirmed that these requirements were not applicable; the boiler was manufactured on 4/31/78, and the cost of rebuilding was \$31,967.00 versus \$75,578.00 for a new unit. However, all notification requirements had already been met, but R-Y Timber remained subject to reporting and recordkeeping requirements for the life of the boiler.

The current permitting action involves removing the NSPS reporting and recordkeeping requirements of 40 CFR 60 Subpart Dc for the Cleaver Brooks natural gas boiler. Permit **#2588-04** replaces permit #2588-03.

D. Additional Information

Additional information, such as applicable rules and regulations, BACT determinations, air quality impacts, and environmental assessments are included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations which apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available upon request from the department. Upon request, the department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 16.8, Subchapter 7, General Provisions, including but not limited to:

1. ARM 16.8.704, Testing Requirements. Any person or persons responsible for the emissions of any air contaminant into the outdoor atmosphere shall, upon written request of the department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the department.
2. ARM 16.8.705, Malfunctions. (2) The department must be notified promptly by phone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than four hours.
3. ARM 16.8.707, Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.
4. ARM 16.8.709, Source Testing Protocol. R-Y Timber shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual.

B. ARM 16.8, Subchapter 8, Ambient Air Quality, including but not limited to:

ARM 16.8.811 Ambient Air Quality Standards for Carbon Monoxide, ARM 16.8.816 Ambient Air Quality Standards for Nitrogen Dioxide, ARM 16.8.820 Ambient Air Quality Standards for Sulfur Dioxide, and ARM 16.8.821 Ambient Standards for PM-10

R-Y Timber must comply with the applicable ambient air quality standards. Because there will not be an increase in allowable emissions caused by this permitting action, the department believes that it will not lead to a violation of the ambient air quality standards.

C. ARM 16.8, Subchapter 9, Prevention of Significant Deterioration of Air Quality (PSD), including but not limited to:

ARM 16.8.921 Definitions R-Y Timber is not defined as a "major stationary source" because it is not a listed source and does not have the potential to emit more than 250 tons of any pollutant, calculated using enforceable operating limits (See Section IV, Emission Inventory).

D. ARM 16.8, Subchapter 11 Permit, Construction and Operation of Air Contaminant Sources, including but not limited to:

1. ARM 16.8.1102 When Permit Required--Exclusions This section requires a source to obtain an air quality permit if they construct, alter or use an air contaminant source which has the potential to emit more than 25 tons per year of any pollutant.
 2. ARM 16.8.1109 Conditions for Issuance of Permit This section requires that R-Y Timber demonstrate compliance with applicable rules and standards before a permit can be issued. R-Y Timber has demonstrated compliance with applicable rules and standards as required for permit issuance.
 3. ARM 16.8.1111 Duration of Permit This section states that an air quality permit shall be valid until revoked or modified as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than one year after the permit is issued.
 4. ARM 16.8.1113 Modification of Permit This section allows air quality permits to be modified for changed conditions at a source or stack which do not result in an increase of emission because of the changed conditions of operation. This permit modification does not result in an increase of emissions.
 5. ARM 16.8.1115 Inspection of Permit This requires that air quality permits shall be made available for inspection by the department at the location of the source.
 6. ARM 16.8.1117 Compliance with Other Statutes and Rules This requires the permit holder to comply with all other applicable Federal and Montana statutes, rules and standards.
 7. ARM 16.8.1119 General Procedures for Air Quality Preconstruction Permitting. This air quality preconstruction permit contains requirements and conditions applicable to both construction and subsequent use of the permitted equipment.
- E. ARM 16.8, Subchapter 14, Emission Standards, including but not limited to:
1. ARM 16.8.1401 Particulate Matter, Airborne. This section requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate.
 2. ARM 16.8.1402 Particulate Matter, Fuel Burning Equipment, and ARM 16.8.1403 Particulate Matter, Industrial Process The requirements of these sections apply to all fuel burning and processing equipment located at the lumber mill.
 3. ARM 16.8.1404 Visible Air Contaminants This section requires an opacity limitation of 40% for all stacks or vents existing prior to November 23, 1968 and an opacity limitation of 20% for all stacks or vents installed after November 23, 1968.
- F. ARM 16.8.1901, *et seq.* (Subchapter 19), Air Quality Permit Application, Operation and Open Burning Fees, including but not limited to:

ARM 16.8.1903 Air Quality Operation Fees. An annual air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

must.

The annual assessment and collection of the air quality operation fee, as described above, shall take place on a calendar year basis. The department may insert into any final permit issued after the effective date of these rules such conditions as may be necessary to require the payment of an air quality operation fee on a calendar year basis, including provisions which prorate the required fee amount.

III. Emission Inventory - Criteria Pollutants (tons/year)

Source	tons/year					
	TSP	PM-10	NOx	VOC	CO	SOX
Shaving Cyclone to Burner	14.88	5.95				
Shaving Cyclone to Truck	14.88	5.95				
Fuel Usage - Diesel	0.91	0.91	14.68	1.07	6.33	1.60
Fugitive Dust - Log Yard	4.09	1.47				
Fugitive Dust - Mill/Planer	1.42	0.51				
Log Debarking	4.16	2.29				
Cleaver Brooks Boiler	0.46	0.46	10.30	0.43	2.58	0.04
Standard Dry Kiln	N/A	N/A				
Total Emissions	40.8	17.54	24.98	1.50	8.91	1.64

Shaving Cyclone to Burner

Production Flowrate: 13227 scfm (Designed flow rate)
 Hours of operation: 8760 hrs {Maximum Potential}
 Fraction of year operating: 1.00 %/yr

TSP Emissions

Emission Factor: 2.25 lbs/scfm {3-07-008-05, AFSSCC page 143}
 Control Efficiency: 0%
 Calculations: $13227 \text{ scfm} * 2.25 \text{ lbs/scfm} * 1.00 \text{ %/yr} * 0.0005 \text{ tons/lb} = 14.88 \text{ tons/yr}$

PM-10 Emissions:

Emission Factor: 0.90 lbs/scfm {3-07-008-05, AFSSCC page 143}
 Control Efficiency: 0%
 Calculations: $13227 \text{ scfm} * 0.90 \text{ lbs/scfm} * 1.00 \text{ %/yr} * 0.0005 \text{ tons/lb} = 5.95 \text{ tons/yr}$

Shaving Cyclone to Truck

Production Flowrate: 13227 scfm (Designed flow rate)
 Hours of operation: 8760 hrs {Maximum Potential}
 Fraction of year operating: 1.00 %/yr

TSP Emissions

Emission Factor: 2.25 lbs/scfm {3-07-008-05, AFSSCC page 143}
 Control Efficiency: 0%
 Calculations: $13227 \text{ scfm} * 2.25 \text{ lbs/scfm} * 1.00 \text{ %/yr} * 0.0005 \text{ tons/lb} = 14.88 \text{ tons/yr}$

PM-10 Emissions:

Emission Factor: 0.90 lbs/scfm {3-07-008-05, AFSSCC page 143}
 Control Efficiency: 0%
 Calculations: $13227 \text{ scfm} * 0.90 \text{ lbs/scfm} * 1.00 \text{ %/yr} * 0.0005 \text{ tons/lb} = 5.95 \text{ tons/yr}$

Fuel Usage - Diesel

Annual Production: (105% of 1990 production) 102.6 10³ gal/yr

TSP Emissions

Emission Factor: 17.7 lbs/10³ gal {AP-42 Vol. II Mobile Sources}
 Control Efficiency: 0.0%
 Calculations: $102.60 \text{ 10}^3 \text{ gal/yr} * 17.7 \text{ lbs/10}^3 \text{ gal} * 0.0005 \text{ tons/lb} = 0.91 \text{ tons/yr}$

PM-10 Emissions:

Emission Factor: 17.7 lbs/10³ gal {AP-42 Vol. II Mobile Sources}
 Control Efficiency: 0.0%

Calculations: $102.60 \times 10^3 \text{ gal/yr} * 17.7 \text{ lbs}/10^3 \text{ gal} * 0.0005 \text{ tons/lb} = 0.91 \text{ tons/yr}$

NOx Emissions:

Emission Factor: 286.10 lbs/10³ gal {AP-42 Vol. II Mobile Sources}

Control Efficiency: 0.0%

Calculations: $102.60 \times 10^3 \text{ gal/yr} * 286.10 \text{ lbs}/10^3 \text{ gal} * 0.0005 \text{ tons/lb} = 14.68 \text{ tons/yr}$

VOC Emissions:

Emission Factor: 20.9 lbs/10³ gal {AP-42 Vol. II Mobile Sources}

Control Efficiency: 0.0%

Calculations: $102.60 \times 10^3 \text{ gal/yr} * 20.9 \text{ lbs}/10^3 \text{ gal} * 0.0005 \text{ tons/lb} = 1.07 \text{ tons/yr}$

CO Emissions:

Emission Factor: 123.46 lbs/10³ gal {AP-42 Vol. II Mobile Sources}

Control Efficiency: 0.0%

Calculations: $102.60 \times 10^3 \text{ gal/yr} * 123.46 \text{ lbs}/10^3 \text{ gal} * 0.0005 \text{ tons/lb} = 6.33 \text{ tons/yr}$

SOx Emissions:

Emission Factor: 31.20 lbs/10³ gal {AP-42 Vol. II Mobile Sources}

Control Efficiency: 0.0%

Calculations: $102.60 \times 10^3 \text{ gal/yr} * 31.2 \text{ lbs}/10^3 \text{ gal} * 0.0005 \text{ tons/lb} = 1.60 \text{ tons/yr}$

Fugitive Dust - Log Yard

Operating Hours 8760 Hours/Yr

Vehicle Miles Traveled 7732 VMT/Yr (105% of 1990 production)
(1990 production was 95% of capacity)

Control Efficiency is 50% for watering.

TSP Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E= TSP Emission Factor in Lbs/Vehicle Mile Traveled (VMT)

k= Particle sizing constant for TSP 1.0

s= Silt Content in percent 4.8 %

S= Average Speed of vehicles in mph 5.0 mph

W= Average weight of vehicles in Tons 55.4 Tons

w= Average number of wheels on vehicles 4 wheels

PR= Precipitation Ratio based on the following:

110 Days with more than .01" of Precipitation

$$PR = (365 \text{ days} - 110 \text{ days}) / 365 \text{ Days} = 0.6986$$

TSP Emissions:

TSP Emission Factor 2.12 Lbs/VMT

$$E(\text{TSP}) = (7732 \text{ VMT/Yr})(2.12 \text{ Lbs/VMT})(0.5)$$

$$E(\text{TSP}) = 8180 \text{ Lbs/Yr}$$

or 4.09 Tons/Yr

PM10 Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E= PM10 Emission Factor in Lbs/Vehicle Mile Traveled (VMT)

k= Particle sizing constant for PM10 0.36

s= Silt Content in percent 4.8 %

S= Average Speed of vehicles in mph 5.0 mph

W= Average weight of vehicles in Tons 55.4 Tons

w= Average number of wheels on vehicles 4 wheels

PR= Precipitation Ratio based on the following:

110 Days with more than .01" of Precipitation

$$PR = (365 \text{ days} - 110 \text{ days}) / 365 \text{ Days} = 0.6986$$

PM10 Emissions:

PM10 Emission Factor 0.76 Lbs/VMT

$$E(\text{PM10}) = (7732 \text{ VMT/Yr})(0.76 \text{ Lbs/VMT})(0.5)$$

$$E(\text{PM10}) = 2945 \text{ Lbs/Yr}$$

or 1.47 Tons/Yr

Fugitive Dust - Mill/Planer

Operating Hours 8760 Hours/Yr

Vehicle Miles Traveled 6392 VMT/Yr (105% of 1990 production)
(1990 production was 95% of capacity)

Control Efficiency is 50% for watering.

TSP Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E= TSP Emission Factor in Lbs/Vehicle Mile Traveled (VMT)

k= Particle sizing constant for TSP 1.0

s= Silt Content in percent 4.8 %

S= Average Speed of vehicles in mph 5.0 mph

W= Average weight of vehicles in Tons 16.0 Tons

w= Average number of wheels on vehicles 4 wheels

PR= Precipitation Ratio based on the following:

110 Days with more than .01" of Precipitation

$$PR = (365 \text{ days} - 110 \text{ days}) / 365 \text{ Days} = 0.6986$$

TSP Emissions:

TSP Emission Factor 0.89 Lbs/VMT

$$E(\text{TSP}) = (6392 \text{ VMT/Yr})(0.89 \text{ Lbs/VMT})(0.5)$$

$$E(\text{TSP}) = 2835 \text{ Lbs/Yr}$$

or 1.42 Tons/Yr

PM10 Emission Factor is determined by the following equation:

$$E = 5.9 * k * (s/12) * (S/30) * (W/3) ** 0.7 * (w/4) ** 0.5 * PR$$

Where:

E= PM10 Emission Factor in Lbs/Vehicle Mile Traveled (VMT)

k= Particle sizing constant for PM10 0.36

s= Silt Content in percent 4.8 %

S= Average Speed of vehicles in mph 5.0 mph

W= Average weight of vehicles in Tons 16.0 Tons

w= Average number of wheels on vehicles 4 wheels

PR= Precipitation Ratio based on the following:

110 Days with more than .01" of Precipitation

$$PR = (365 \text{ days} - 110 \text{ days}) / 365 \text{ Days} = 0.6986$$

PM10 Emissions:

PM10 Emission Factor 0.32 Lbs/VMT

$$E(\text{PM10}) = (6392 \text{ VMT/Yr})(0.32 \text{ Lbs/VMT})(0.5)$$

$$E(\text{PM10}) = 1021 \text{ Lbs/Yr}$$

or 0.51 Tons/Yr

Log Debarking

Lumber Production: 100.00 MMBF/yr (Based on Maximum Production Rate)

Tons of logs processed: 100.00 MMBF/yr * 4164 tons/MMBF = 416400 tons/yr
(Department Estimate)

TSP Emissions:

Emission Factor: 0.02 lbs/ton {3-07-008-01, AFSEF page 143}

$$\text{Calculations: } 416400 \text{ tons/yr} * 0.02 \text{ lbs/ton} * 0.0005 \text{ tons/lb} = 4.16 \text{ tons/yr}$$

PM-10 Emissions:

Emission Factor: 0.011 lbs/ton {3-07-008-01, AFSEF page 143}
Calculations: $416400 \text{ tons/yr} * 0.011 \text{ lbs/ton} * 0.0005 \text{ tons/lb} = 2.29 \text{ tons/yr}$

Cleaver Brooks Boiler

Fuel Consumption Rate: $16800 \text{ ft}^3/\text{hr}$ {Information from company}

TSP Emissions:

Emission Factor: $6.20 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas}$ {AP-42, Table 1.4-1, Rev. 10/92}
Fuel Consumption: $147.17 \cdot 10^6 \text{ ft}^3/\text{yr}$ {Information from company}
Calculations: $147.17 * 10^6 \text{ ft}^3/\text{yr} * 6.20 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ tons/lb} = 0.46 \text{ tons/yr}$

PM-10 Emissions:

Emission Factor: $6.20 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas}$ {AP-42, Table 1.4-1, Rev. 10/92}
Fuel Consumption: $147.17 \cdot 10^6 \text{ ft}^3/\text{yr}$ {Information from company}
Calculations: $147.17 * 10^6 \text{ ft}^3/\text{yr} * 6 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ tons/lb} = 0.46 \text{ tons/yr}$

NOx Emissions:

Emission Factor: $140 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas}$ {AP-42, Table 1.4-1, Rev. 10/92}
Fuel Consumption: $147.17 \cdot 10^6 \text{ ft}^3/\text{yr}$ {Information from company}
Calculations: $147.17 * 10^6 \text{ ft}^3/\text{yr} * 140 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ tons/lb} = 10.30 \text{ tons/yr}$

VOC Emissions:

Emission Factor: $5.80 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas}$ {AP-42, Table 1.4-1, Rev. 10/92}
Fuel Consumption: $147.17 \cdot 10^6 \text{ ft}^3/\text{yr}$ {Information from company}
Calculations: $147.17 * 10^6 \text{ ft}^3/\text{yr} * 5.80 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ tons/lb} = 0.43 \text{ tons/yr}$

CO Emissions:

Emission Factor: $35 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas}$ {AP-42, Table 1.4-1, Rev. 10/92}
Fuel Consumption: $147.17 \cdot 10^6 \text{ ft}^3/\text{yr}$ {Information from company}
Calculations: $147.17 * 10^6 \text{ ft}^3/\text{yr} * 35 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ tons/lb} = 2.58 \text{ tons/yr}$

SOx Emissions:

Emission Factor: $0.6 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas}$ {AP-42, Table 1.4-1, Rev. 10/92}
Fuel Consumption: $147.17 \cdot 10^6 \text{ ft}^3/\text{yr}$ {Information from company}
Calculations: $147.17 * 10^6 \text{ ft}^3/\text{yr} * 0.6 \text{ lbs}/10^6 \text{ ft}^3 \text{ gas} * 0.0005 \text{ tons/lb} = 0.04 \text{ tons/yr}$

Standard Dry Kiln

Kiln Production Rate: 24.00 MMBF/yr (Based on Maximum Production Rate)

Tons of lumber processed: $24.00 \text{ MMBF/yr} * 2.5 \text{ lbs/BF} * 0.0005 \text{ tons/lb} = 30000 \text{ tons/yr}$

TSP Emissions: $< 0.01 \text{ lbs/ton}$ (negligible)

PM-10 Emissions: $< 0.01 \text{ lbs/ton}$ (negligible)

IV. Existing Air Quality and Impacts

The air quality in the area surrounding R-Y Timber is considered unclassified. The department does not believe that this source will cause or contribute to a violation of any ambient standards

V. Taking or Damaging Implication Analysis

As Required by 2-10-101 through 105, MCA, the department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications.

VI. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility, therefore, an environmental assessment is not required

Analysis Prepared By: Angelia Haller
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